

REMARKS

Claims 1-18 are presently pending in the application. Claims 6-18 have been added. Reconsideration and allowance of all claims is respectfully requested in view of the following remarks.

Applicants thank the Examiner for acknowledging receipt and recordation of the Information Disclosure Statement filed on April 16, 2004, and returning the initialed PTO/SB/08 Form.

However, the Applicants await receipt of the initialed Form PTO/SB/08 that was filed on October 29, 2003.

Claim Rejections Due to Informalities

Claims 2-5 are objected to because of informalities. Claims 2-5 have been amended to obviate any informalities noted by the Examiner. Accordingly, the Examiner's objection should be withdrawn.

Claim Rejections under 35 U.S.C. §103

Claim 1 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Potega (USP 6,152,597). Claims 1-2 were rejected under 35 U.S.C. §103(a) as being unpatentable over Sommer (USP 3,966,578). Claim 1 was rejected under 35 U.S.C. §103(a) as being unpatentable over Kato et al. (USP 5,823,680). Claim 1 was rejected under 35 U.S.C. §103(a) as being unpatentable over Heine et al. (USP 2003/0152130). Claims 1, 3-5 were rejected under 35 U.S.C. §103(a) as being unpatentable over Schmermund (USP 6,341,892). Claim 1 was rejected under 35 U.S.C. §103(a) as being unpatentable over JP 07/296,786A in view of Potega.

For the following reasons, the prior art rejections are respectfully traversed.

The Applicants respectfully submit that neither Potega, Sommer, Kato et al., Heine et al., Schmermund, nor JP 07296786 (hereafter Wakahara), teaches or suggests a flexible wired circuit board for temperature measurement including a conductor layer; a base insulating layer formed entirely on the conductor layer; wherein the conductor layer is formed from a metal foil having a proportional relation between temperature and specific electric resistance; and wherein the conductor layer includes a temperature detecting portion formed when the conductor is formed as a wiring portion and arranged in a predetermined pattern on the base insulating layer, as recited in amended Claim 1.

Rather, Potega discloses in col. 14, lines 57-65, a hybrid temperature sensor using a paper backing on which one or more layers of aluminum foil is laminated, instead of laminating the paper backing entirely on the aluminum foil as in the flexible wired circuit board of the present invention. Conductive traces with silk-screened thermally-resistive ink therebetween are formed on the aluminized paper in Potega, but the conductive traces (with ink therebetween) are not formed from the aluminum foil as a wiring portion, as in the flexible wired circuit board of the present invention.

Further, in contrast to the present invention, Sommer discloses a thermistor including a polyimide film 11, on which a stainless steel mask 18 is placed to deposit strips 17. However, the film 11 is not formed entirely on the mask 18 (but rather the mask is formed on film 11), and the mask 18 itself does not form the strips 17 as in the flexible wired circuit board of the present invention.

Still further, in contrast to the present invention, Kato et al. disclose only a temperature sensor formed of a ceramic substrate 1, including a sensing resistor 2 composed of a paste mixture of platinum and alumina, printed onto the surface of the ceramic sheet 1.

Kato et al. fail to disclose that the sensing resistor 2 is formed entirely on the substrate 1, and that the sensing resistor 2 is formed from a metal foil as a conductor layer which is formed as a wiring portion, as in the flexible wired circuit board of the present invention.

Also in contrast to the present invention, Heine et al. disclose two resistor layers - a temperature measuring resistor 3 provided as strip-like printed conductors, and a resistor layer as a control element 2 - which are applied to a substrate 1 in a common layer as a metal plating using known methods, such as vapor deposition. However, Heine et al. fails to disclose that the substrate 1 is formed entirely on the resistor common layer 2, 3 (rather than the common layer 2, 3 being vapor deposited on the substrate 1), and that the common layer 2 is a (single) conductor layer formed as a wiring portion as in the flexible wired circuit board of the present invention.

Still further, in contrast to the present invention, Schmermund discloses a resistance temperature sensor 15, including a thin platinum resistor 16 premanufactured on a ceramic substrate 17 (see col. 2, lines 27-34, and col. 3, lines 21-24). However, Schmermund fails to teach or suggest the substrate 17 being entirely formed on the platinum resistor 16, as is the base insulating layer formed entirely on the conductor layer of the present invention.

Finally, the Applicants respectfully submit that the preamble of the present invention, which is directed to a flexible wired circuit board, is necessary to give life, meaning, and vitality to the claim, and should be considered construed as if in the balance of the claim. The preamble's recitation of the "flexible wired circuit board" is essential to point out the invention defined by the claims. (See MPEP 2111.02, and *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305, 51 USPQ2d 1161, 1165-66 (Fed. Cir. 1999); and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951)). Since none of the applied

prior art references are directed to a flexible wired circuit board, the Applicants respectfully submit that the present invention cannot be considered obvious over the applied prior art, and that the addition of the Wakahara reference does not make up for the deficiencies in such applied prior art such as the Potega reference.

Accordingly, Claim 1 is not obvious over either the individual or the combination of the Potega, Sommer, Kato et al., Heine et al., Schmermund, and Wakahara references, and the rejection of Claim 1 under 35 U.S.C. §103 should be withdrawn.

Further, since Claims 2-5 depend from Claim 1, they are also patentably distinguishable over either the individual or the combination of the applied prior art references for at least the reasons cited above with respect to Claim 1.

With respect to new independent Claim 6, the Applicants respectfully submit that none of the applied prior art references teaches or suggests a method of preparing a flexible wired circuit board for temperature measurement, including: providing a conductor layer formed from a metal foil and having a proportional relation between temperature and specific electric resistance; forming a base insulating layer on the conductor layer; and forming a temperature detecting portion on the base insulating layer, by forming a wiring from the conductor layer, the wiring being disposed in a predetermined pattern on the base insulating layer.

Rather, as stated above, the applied prior art references all disclose forming a resistor or metal layer on a substrate rather than forming the substrate on the metal layer, and do not teach or suggest forming the wiring portion from the metal layer itself.

Accordingly, Claim 6 is patentable over the applied prior art.

Further, since Claims 7-17 depend from Claim 6, they are also patentable over the applied prior art for at least the reasons cited above with respect to Claim 6.

With respect to new Claim 18, the Applicants respectfully submit that none of the applied prior art references teach or suggest a flexible wired circuit board for temperature measurement including a base insulating layer formed from a polyimide film; and a conductor layer formed from a stainless foil, and formed on said base insulating layer; and a cover insulating layer formed from a polyimide film, and formed on the conductor layer; wherein the conductor layer, including a main wiring portion for wiring and a sensor-wiring portion for detecting temperature, is formed in one piece in a form of a predetermined pattern.

Accordingly, Claim 18 is patentable over the applied prior art.

If the Examiner believes that there is any issue which could be resolved by a telephone or personal interview, the Examiner is respectfully requested to contact the undersigned attorney at the telephone number listed below.

Applicants hereby petition for any extension of time which may be required to maintain the pendency of this case, and any required fee for such an extension is to be charged to Deposit Account No. 04-1061.

Respectfully submitted,

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